OIPE

RAW SEQUENCE LISTING   DATE: 08/06/2001
PATENT APPLICATION: US/09/773,476   TIME: 15:28:58

Input Set : A:\LEX-0126-USA SEQUENCE LISTING.txt
Output Set: N:\CRF3\08062001\I773476.raw

ENTERED

```
     4 <110> APPLICANT: Friedrich, Glenn
     5        Zambrowicz, Brian
     6        Sands, Arthur T.
     8 <120> TITLE OF INVENTION: Novel Mutated Mammalian Cells and
     9        Animals
    11 <130> FILE REFERENCE: LEX-0126-USA
C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/773,476
C--> 13 <141> CURRENT FILING DATE: 2001-01-31
    13 <150> PRIOR APPLICATION NUMBER: US 60/179,110
    14 <151> PRIOR FILING DATE: 2000-01-31
    16 <160> NUMBER OF SEQ ID NOS: 341
    18 <170> SOFTWARE: FastSEQ for Windows Version 4.0
    20 <210> SEQ ID NO: 1
    21 <211> LENGTH: 158
    22 <212> TYPE: DNA
    23 <213> ORGANISM: Mus musculus
    25 <400> SEQUENCE: 1
    26 acttatggat cttcactgca agatggactg ttccaatctc agaggaactc ttccagaaac      60
    27 ctgtatagac tactttggcc ttgaactcct acaggtgggc ctgcctttgc ttcctagtgc     120
    28 tgggattaaa ggtgtgtatc accactgaaa aaaaaaaa                             158
    30 <210> SEQ ID NO: 2
    31 <211> LENGTH: 153
    32 <212> TYPE: DNA
    33 <213> ORGANISM: Mus musculus
    35 <220> FEATURE:
    36 <221> NAME/KEY: misc_feature
    37 <222> LOCATION: (1)...(153)
    38 <223> OTHER INFORMATION: n = A,T,C or G
    40 <400> SEQUENCE: 2
W--> 41 gactgaggga aagtcatgga ggcttcaggc ntcttcttcc cagtctcaag acagtggtgg      60
W--> 42 agtccacagg gaaacggaag atcactncgc cgaccatgng ganctggcct tnctangagg     120
W--> 43 acgagcttca gctnttgagg agcgtgctgc tgt                                  153
    45 <210> SEQ ID NO: 3
    46 <211> LENGTH: 361
    47 <212> TYPE: DNA
    48 <213> ORGANISM: Mus musculus
    50 <220> FEATURE:
    51 <221> NAME/KEY: misc_feature
    52 <222> LOCATION: (1)...(361)
    53 <223> OTHER INFORMATION: n = A,T,C or G
    55 <400> SEQUENCE: 3
W--> 56 aacatcgatc atgtcatttc ctcgcttgga acgaattcag cctctcatan cgggcaacag      60
    57 caccaaggcc tgaaaggaag gcttgctggg tgccaggaag caggacattg cattaaaaag     120
    58 caggtctggt tcagcactaa tccctaccta cttctgcttg gtcccgccag ctcgctacca     180
    59 tggattcctg agatcttttt gttccggctc acttccttcc tctggccatc aacctaagga     240
W--> 60 ggtcctgttt gcaagccatt gtccatgaca ttgctttttg tttgggtttt tgattgntga     300
W--> 61 gtctggtctt gaacttgnga tcttcctgcc tcttcaatgn naagngaacc accatccctg     360
```

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Output Set: N:\CRF3\08062001\I773476.raw

```
    62 a                                                          361
    64 <210> SEQ ID NO: 4
    65 <211> LENGTH: 239
    66 <212> TYPE: DNA
    67 <213> ORGANISM: Mus musculus
    69 <220> FEATURE:
    70 <221> NAME/KEY: misc_feature
    71 <222> LOCATION: (1)...(239)
    72 <223> OTHER INFORMATION: n = A,T,C or G
    74 <400> SEQUENCE: 4
W--> 75 taggacccag aagatgtgtg tgcgagattg tgtcttctan aaatgatggg gacgcttcac      60
W--> 76 ccatgttacc caaacagtat ggttgtctaa acaagacccg aacatganca tcaccaacag     120
    77 acatgccaat atggaaagga aatcccctgg agtccctaag aactacagtc ggcctcggaa     180
W--> 78 ttgttgggag tggggaggag tcttntgtct cacccangna tgaccctgct accgcctat      239
    80 <210> SEQ ID NO: 5
    81 <211> LENGTH: 210
    82 <212> TYPE: DNA
    83 <213> ORGANISM: Mus musculus
    85 <220> FEATURE:
    86 <221> NAME/KEY: misc_feature
    87 <222> LOCATION: (1)...(210)
    88 <223> OTHER INFORMATION: n = A,T,C or G
    90 <400> SEQUENCE: 5
W--> 91 gagacatgct gatgctggga caaagaatgg tgctgncatg agctttcaga gtactctgac      60
W--> 92 nacggtgact gggaagctgt tttggacatn nggncctntn cccacccttg nttgcctatn     120
W--> 93 ttccagattg gatnanctgc cttccttcaa gcttttaaac ctngnncggn agagaacatg     180
W--> 94 aagactggaa acnaccttta aaaacttaat                                      210
    96 <210> SEQ ID NO: 6
    97 <211> LENGTH: 264
    98 <212> TYPE: DNA
    99 <213> ORGANISM: Mus musculus
   101 <220> FEATURE:
   102 <221> NAME/KEY: misc_feature
   103 <222> LOCATION: (1)...(264)
   104 <223> OTHER INFORMATION: n = A,T,C or G
   106 <400> SEQUENCE: 6
W--> 107 gactgaggtg gggtctttca ggaggagagg aagncgacga cgacgacgct agttactgca      60
W--> 108 cggaaagcag cttcaggagc catagtacat acagcagcac tccanntaan nacccaaagn     120
W--> 109 nnangggnga nngnttccnc acctnctccc tccccctggc ttgctccctc tccagtgcag     180
   110 tgcatcctgc ttcctagctc ccccccccct tcccggcctg tcccccacgc ggaggccacg     240
W--> 111 gcgcgtntag tgacaaaaaa aaaa                                           264
   113 <210> SEQ ID NO: 7
   114 <211> LENGTH: 355
   115 <212> TYPE: DNA
   116 <213> ORGANISM: Mus musculus
   118 <220> FEATURE:
   119 <221> NAME/KEY: misc_feature
   120 <222> LOCATION: (1)...(355)
   121 <223> OTHER INFORMATION: n = A,T,C or G
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Input Set : A:\LEX-0126-USA SEQUENCE LISTING.txt
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```
      123 <400> SEQUENCE: 7
      124 gaactgagat ctccagtcca ggatttcccc tggtccacga atcttgttgg aatgccttcg     60
      125 gagcatcact gatccaggag ctgaccttct gtcatttaca tggcgtctcc ttgatgaaat    120
      126 attctccagc tgcttaagaa catagtgaac agtttctcac ggattccaac ttgaacaaaa    180
      127 atcacacctc catccttgtt caacagaccc ccaaagcatc tactttccca agtacacaca    240
W--> 128 ctcaggaggc agagccaagt ggaccttttg agttcaagcc caacgtggtc tacanaagca    300
      129 aagtttcagg acagccaggg cttcataaat agatcttgtc tcaaataaaa aagaa         355
      131 <210> SEQ ID NO: 8
      132 <211> LENGTH: 188
      133 <212> TYPE: DNA
      134 <213> ORGANISM: Mus musculus
      136 <220> FEATURE:
      137 <221> NAME/KEY: misc_feature
      138 <222> LOCATION: (1)...(188)
      139 <223> OTHER INFORMATION: n = A,T,C or G
      141 <400> SEQUENCE: 8
W--> 142 actgagtatg tgtgtgccgg nagagttcaa agcagggctt cggcatcccc tggacattat     60
      143 caatagtggg caaggacctc aggtttctgg agagaacagc aagagctctt aatgggcccag    120
W--> 144 ccaactccca agtctcttca gttatatttt ttccaagaat tacntaaaag aggctattaa    180
      145 aaaaaaaa                                                             188
      147 <210> SEQ ID NO: 9
      148 <211> LENGTH: 436
      149 <212> TYPE: DNA
      150 <213> ORGANISM: Mus musculus
      152 <220> FEATURE:
      153 <221> NAME/KEY: misc_feature
      154 <222> LOCATION: (1)...(436)
      155 <223> OTHER INFORMATION: n = A,T,C or G
      157 <400> SEQUENCE: 9
W--> 158 aatgaaggac cctganactn ctcngaagaa gggattgatg cnggncgctt ttggaatgat     60
W--> 159 acagaacnnn ctacaaccag aaacactagn aaaggccact gaaaangcta acgcctaaac    120
W--> 160 ccgggtntna angcnntccg cacnccggcc cagnntacgg naccgncttt cagccaggcc    180
W--> 161 tgnggganagc aagagtgaaa aaatgcggag gggagttcca agccgccttt tcccaactna    240
W--> 162 agggccccgg actttgnttg nccgttgctg aaagancсct atagacaaag atgagaagac    300
W--> 163 nttnttngaa ttgatcagag acaaaaaagg gctcgaanna aangagtttt gancggnaca    360
W--> 164 ccgtaccatt taaatgtgtc tgctctttct ggnntnaatc aaanaaaggg atccctntgg    420
      165 aaatacgaat attcgg                                                    436
      167 <210> SEQ ID NO: 10
      168 <211> LENGTH: 306
      169 <212> TYPE: DNA
      170 <213> ORGANISM: Mus musculus
      172 <220> FEATURE:
      173 <221> NAME/KEY: misc_feature
      174 <222> LOCATION: (1)...(306)
      175 <223> OTHER INFORMATION: n = A,T,C or G
      177 <400> SEQUENCE: 10
W--> 178 gactgaggtg gccctctagc tgcactggcc ctccacanct atggcctcct gcccagactc     60
      179 agataatagc tgggtgctcg ctggttctga gaatctgcct gtggagactc tgggcccaga    120
      180 acccaggatg gacccagaat ctgagggagc ctcccaggcc cttcgggact cctccaaggc    180
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```
    181 agatggcaaa gaattagctt gggaccttgg atggagaaga gaagcttttc cagacggaaa    240
    182 gttcccagag agaaactgct gttctgacag agtctgcggc caagggcact ctgggagccg    300
    183 atggtc                                                                 306
    185 <210> SEQ ID NO: 11
    186 <211> LENGTH: 205
    187 <212> TYPE: DNA
    188 <213> ORGANISM: Mus musculus
    190 <220> FEATURE:
    191 <221> NAME/KEY: misc_feature
    192 <222> LOCATION: (1)...(205)
    193 <223> OTHER INFORMATION: n = A,T,C or G
    195 <400> SEQUENCE: 11
W--> 196 gctgcccgtc cctccagata ctctgctggg ctcctgangg gctncttgaa ttgacccta     60
W--> 197 ngtgtnngct tgnggagccc aatgtntnta aaagaaggca tgttctgatc caaagtgtta    120
    198 tcgtcaagtg tgctaattta accagactga ctcacagatg gcttctttaa taaataaacc    180
    199 cttttcctat ttttaaaaaa aaaaa                                            205
    201 <210> SEQ ID NO: 12
    202 <211> LENGTH: 267
    203 <212> TYPE: DNA
    204 <213> ORGANISM: Mus musculus
    206 <220> FEATURE:
    207 <221> NAME/KEY: misc_feature
    208 <222> LOCATION: (1)...(267)
    209 <223> OTHER INFORMATION: n = A,T,C or G
    211 <400> SEQUENCE: 12
W--> 212 cagctcacga tgccagganc tgaccaatna ctactttggn ttcagtggat ggtcgaaaag     60
W--> 213 gatcatcaag ctgcaggagc tctccgnact ggangatgca gctctcagct gtgcccatgc    120
W--> 214 anaaggggag cccccagatn ctntgcgctg tanaggaggt gctgccccc tacggatgca    180
W--> 215 gnagccctgg ggttggcatc tctgaggagc ctntgcacca gctggaggaa gggaagagct    240
W--> 216 ggntaattat gaacaggaag acagctc                                         267
    218 <210> SEQ ID NO: 13
    219 <211> LENGTH: 282
    220 <212> TYPE: DNA
    221 <213> ORGANISM: Mus musculus
    223 <220> FEATURE:
    224 <221> NAME/KEY: misc_feature
    225 <222> LOCATION: (1)...(282)
    226 <223> OTHER INFORMATION: n = A,T,C or G
    228 <400> SEQUENCE: 13
W--> 229 tttaagaacc cgaggncaag acccacctga nttntagaat gagngacaaa acccnccntn     60
W--> 230 ncatnattna tnannaattt caagangggc agctcgaana ngcntcngcn gnnctctatt    120
W--> 231 catcntacan ggacaagggt gcactcatgg ntttcagagg aattcctatc tccgagctga    180
W--> 232 cgaaccatgg gattctccag gccctgacgg nagaaaacca atgggtggca nacaggtgnt    240
W--> 233 gggagtgaag aggncctaaa gcccaggaag agtgggaagt gg                         282
    235 <210> SEQ ID NO: 14
    236 <211> LENGTH: 421
    237 <212> TYPE: DNA
    238 <213> ORGANISM: Mus musculus
    240 <220> FEATURE:
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         241 <221> NAME/KEY: misc_feature
         242 <222> LOCATION: (1)...(421)
         243 <223> OTHER INFORMATION: n = A,T,C or G
         245 <400> SEQUENCE: 14
W-->     246 gactgaggtt tctggacaga cctagngctt caccaagaga attcaacttg gaaaccaaga    60
         247 ctggtagact ctcgtttctt ccgacaagag gcagaagtca gagagagact gcggattctt   120
         248 gggacacctg ttttcctttt ggaggacacc gagttctttg agaagacagt tcaatatggc   180
         249 aaaggaactg aaagaacggg gaggagccgt tactgtgatt tggtgacggt tcttcagaca   240
         250 accagtgtct taaggaaaac tgggacagag aacttctgaa cttttttgggt tcgttaagtg   300
         251 agaagtcagc atggctcagg taaaaagctc tcgagtcctc cttcaagacc gttcactggg   360
W-->     252 aagcctcttt gcagngtcac ccttgaattc tgccttagcc aacagtattg accatcccca   420
         253 g                                                                  421

         255 <210> SEQ ID NO: 15
         256 <211> LENGTH: 240
         257 <212> TYPE: DNA
         258 <213> ORGANISM: Mus musculus
         260 <400> SEQUENCE: 15
         261 agattctcat gcctgtgacc caggctggtc tggaactaat tatgtagcca gacttgccta    60
         262 aaattcatgg cagtcctctt gcctcagcct cttgtgtggt gggattacag acttgagcaa   120
         263 cattcttcag tgcatttctt aggaatcttg gctaaaaaaa tccaagttta tcacacacaa   180
         264 gttctacctt tattggaata aattcaatca agttctttgt gttccttcca aaaaaaaaaa   240

         266 <210> SEQ ID NO: 16
         267 <211> LENGTH: 111
         268 <212> TYPE: DNA
         269 <213> ORGANISM: Mus musculus
         271 <220> FEATURE:
         272 <221> NAME/KEY: misc_feature
         273 <222> LOCATION: (1)...(111)
         274 <223> OTHER INFORMATION: n = A,T,C or G
         276 <400> SEQUENCE: 16
W-->     277 ggttaaggaa cactgactgc atcttccaaa ggtnctgant tcatcatccn agcaaccaca    60
W-->     278 tggtcggcct cacaancatg tgtaangnga tcttgacagc cctcttctgg t            111

         280 <210> SEQ ID NO: 17
         281 <211> LENGTH: 542
         282 <212> TYPE: DNA
         283 <213> ORGANISM: Mus musculus
         285 <220> FEATURE:
         286 <221> NAME/KEY: misc_feature
         287 <222> LOCATION: (1)...(542)
         288 <223> OTHER INFORMATION: n = A,T,C or G
         290 <400> SEQUENCE: 17
         291 tgagacccca gggccgcagc tttggagcct tacaagggcc taggccgctc gccgtacact    60
W-->     292 ttcccgtccc cggacgacga gggtcccgca ggcaaaagaa ggggctgnct agcactcgag   120
W-->     293 aacgcttctg ggaaatgtan tccgcgattg gaactggcgg ngaagatggc atccattctc   180
W-->     294 ggatttcccg ccagagcacg gcctgaggca ggccgaggag ctcgttccnc attttcaatt   240
         295 ttgtgcgtga aattcctaga cagatataca aactcggaca gaaactctta caatgcattg   300
         296 agcccttcc atgataggg gccaatctca gagaatcact gtatgtttt ggagtaggtt   360
         297 tgcaccggaa gttgtgtaga gtcgcgtgta tttctggaa atgtagtcta aaaaggaac   420
W-->     298 tgcgtggcac tggtctcctg gaacaaagtt gttngaaatg atttctgaga taccacaccc   480
```

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/773,476

DATE: 08/06/2001
TIME: 15:28:59

Input Set : A:\LEX-0126-USA SEQUENCE LISTING.txt
Output Set: N:\CRF3\08062001\I773476.raw

```
L:13  M:270 C: Current Application Number differs, Replaced Current Application No
L:13  M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:41  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:42  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:43  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:56  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:60  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:61  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:75  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:76  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:78  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:91  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:92  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:93  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:94  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:107 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:108 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:109 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:111 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:128 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:142 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:144 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:158 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:159 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:160 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:161 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:162 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:163 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:164 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:178 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:196 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:197 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:212 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:213 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:214 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:215 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:216 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:229 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:230 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:231 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:232 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:233 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:246 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:252 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:277 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:278 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:292 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:293 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
```

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Input Set : **A:\LEX-0126-USA SEQUENCE LISTING.txt**
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```
L:294 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:298 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:299 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:334 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
```